

What is claimed is:

1        1. A filter comprising:  
2              a filter element;  
3              a core member in fluid communication with the filter element; and  
4              a sleeve of a substantially fluid non-permeable material surrounding at least a  
5              portion of one end of the filter element.

1        2. A filter of claim 1 wherein the sleeve surrounds substantially all of the filter element  
2        and has perforations through a portion of the sleeve with the perforations in the sleeve toward one  
end of the filter element.

1        3. A filter of claim 1 wherein the filter element is comprises a material selected from  
pleated media and non-pleated media.

1        4. A filter of claim 3 wherein the non-pleated media is selected from the group  
comprising wrapped media, solid media and granular media.

1        5. A filter element of claim 3 wherein the pleated media comprises a material selected  
2        from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3        paper, nylon, orlon, teflon and combinations thereof.

1           6. A filter element of claim 4 wherein the wrapped media comprises a material selected  
2 from the group comprising spunbonded material, cloth, polypropylene, polyester and mixtures  
3 thereof.

1           7. A filter element of claim 1 further comprising a rigid support surrounding the filter  
2 element inside the sleeve.

1           8. A filter element of claim 1 wherein the rigid support further comprises a mesh.

1           9. A filter element of claim 1 wherein the core member comprises a rigid perforated  
2 tube.

1           10. A filter comprising:

2           a housing with a fluid inlet and a fluid outlet;

3           a filter element disposed within the housing;

4           said filter element having a central core in fluid communication with the filter  
5           element;

6           the fluid outlet of the housing in communication with the central core; and

7           a sleeve of a substantially fluid non-permeable material surrounding at least a  
8           portion of one end of the filter element preventing fluid flow into the filter  
9           element.

1           11. A filter of claim 10 wherein the fluid inlet of the housing is towards the end of the  
2 filter surrounded by the sleeve.

1           12. A filter of claim 10 wherein the sleeve member surrounds substantially all of the filter  
2 element and has perforations through a portion of the sleeve with the perforations in the sleeve  
3 toward one end of the filter element and providing fluid communication to the filter element.

1           13. A filter of claim 10 further comprising a sleeve member which is joined to an end cap  
2 on which the filter element abuts and has a central cylindrical extension in fluid communication with  
3 the central core and has a seal member on the central cylindrical extension and is coupled to the  
outlet of the housing.

1           14. A filter of claim 13 wherein the seal member further comprises a gasket, said gasket  
2 configured to direct the fluid from the central core through the outlet of the housing.

1           15. A filter of claim 10 wherein the filter element comprises a material selected from  
2 pleated media and non-pleated media.

1           16. A filter of claim 15 wherein the non-pleated media is selected from the group  
2 comprising wrapped media, solid media and granular media.

1        17. A filter element of claim 16 wherein the pleated media comprises a material selected  
2        from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3        paper, nylon, orlon, teflon and combinations thereof.

1        18. A filter element of claim 16 wherein the wrapped media comprises a material selected  
2        from the group comprising spunbonded material, cloth, fiberglass, polypropylene, polyester and  
3        mixtures thereof.

1        19. A filter element of claim 10 further comprising a rigid support surrounding the filter  
element inside the sleeve.

20. A filter element of claim 19 wherein the rigid support further comprises a mesh.

21. A filter element of claim 10 wherein the central core comprises a rigid perforated  
tube.

1        /22. A filter comprising:  
2              a cylindrical filter element of pleated filter media;  
3              a perforated central core extending through and surrounded by the pleated filter  
4              media;  
5              a sleeve of substantially fluid non-permeable material surrounding the outside of the  
6              pleated filter media;

1                   the sleeve having perforations through one of the top and the bottom of the sleeve  
2                   capable of providing fluid communication to the filter element;  
3                   a circular top end cap covering and securing the sleeve, the top of the filter element  
4                   and the core; and  
5                   a circular bottom end cap with a central cylindrical extension in fluid communication  
6                   with the central core, said bottom cap securing and covering the sleeve and  
7                   the bottom of the filter element.

1                 23. A filter of claim 22 further comprising a seal member on the central cylindrical  
2                 extension of the bottom end cap adaptable to be received in a filter housing to provide a substantially  
3                 leak-proof connection.

24.

A filter comprising:  
a filter element;  
a core member in the filter element extending a partial length of the filter element  
from one end of the filter element; and  
said core member composed of a substantially fluid non-permeable material.

1                 25. A filter of claim 24 wherein the core member extends substantially the length of the  
2                 filter and has fluid communication to the core member toward one end of the filter element.

1           26. A filter of claim 24 wherein the filter element comprises a material selected from  
2 pleated media and non-pleated media.

1           27. A filter of claim 26 wherein the non-pleated media is selected from the group  
2 comprising wrapped media, solid media and granular media.

1           28. A filter element of claim 26 wherein the pleated media comprises a material selected  
2 from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3 paper, nylon, orlon, teflon and combinations thereof.

1           29. A filter element of claim 27 wherein the wrapped media comprises a material selected  
from the group comprising spunbonded material and cloth.

1           30. A filter element of claim 24 further comprising a rigid support surrounding the filter  
element which allows for fluid flow into the filter element.

1           31. A filter element of claim 30 wherein the rigid support further comprises a mesh.

1           32. A filter element of claim 24 wherein the core member comprises a rigid member.

1           33. A filter element of claim 32 wherein the central core is a rigid perforated cylindrical  
2 member.

1           34. A filter comprising:

2            a housing with a fluid inlet;

3            a filter element disposed within the housing;

4            said filter element having a central core with a fluid non-permeable portion toward

5                 one end of the filter and the central core in fluid communication with the

6                 filter element on the other end of the filter;

7            said housing having a fluid inlet in communication with the central core; and

8            said housing having a fluid outlet.

35. A filter of claim 34 wherein the central core extends the length of the filter and has perforations through a portion of the central core toward one end of the filter element.

36. A filter of claim 34 wherein the central core is joined to an end cap on which the filter element abuts and which end cap has a central cylindrical extension in fluid communication with the central core and has a seal member on the outside of the central cylindrical extension which is coupled to the inside of the inlet of the housing.

37. A filter of claim 36 wherein the seal member further comprises a gasket, said gasket configured to direct the fluid into the filter element.

38. A filter of claim 34 wherein the filter element comprises a material selected from pleated media and non-pleated media.

1           39. A filter of claim 38 wherein the non-pleated media is selected from the group  
2 comprising wrapped media, solid media and granular media.

1           40. A filter element of claim 38 wherein the pleated media comprises a material selected  
2 from the group comprising cellulose, polypropylene, polyethylene, polyester, fiberglass, cloth,  
3 paper, nylon, orlon, teflon and combinations thereof.

1           41. A filter element of claim 39 wherein the wrapped media comprises a material selected  
2 from the group comprising spunbonded media and cloth.

1           42. A filter element of claim 34 further comprising a rigid support surrounding the filter  
2 element.

1           43. A filter element of claim 42 wherein the rigid support comprises a mesh.

1           44. A filter element of claim 34 further comprising a top cap which covers the top of the  
2 central core.

1           45. A method of filter fluids comprising the steps of:  
2                 flowing at least two fluids into a housing;  
3                 passing the fluids around a filter element partially surrounded by an a non-permeable  
4                             barrier at the lower end of the filter element;

1                   allowing the fluids to separate by gravity so that the lighter fluid can flow above the  
2                   sleeve in the housing above the barrier;  
3                   further passing the lighter fluid through a filter media;  
4                   collecting the lighter fluid after passing through the filter element; and  
5                   collecting the heavier fluid in the housing.

1                  46. A method of filtering fluids of claim 45 wherein the fluid mixture contains solids and  
2                   additionally filtering the solids by the filter element.

✓ 47. A method of filter fluids comprising the steps of:  
      flowing at least two fluids into a housing;  
      passing the fluids around a filter element partially surrounded by an a non-permeable  
                 barrier at the upper end of the filter element;  
      allowing the fluids to separate by gravity so that the lighter fluid can flow above the  
                 sleeve in the housing adjacent to the barrier  
      further passing the heavier fluid through a filter media;  
      collecting the heavier fluid after passing through the filter element; and  
      collecting the lighter fluid in the housing.

1                  48. A method of filtering fluids of claim 47 wherein the fluid mixture contains solids and  
2                   additionally filtering the solids by the filter element.